Marine Protected Area Long-term Monitoring Program

Mid-Depth Rocky Habitats

across California's MPA Network

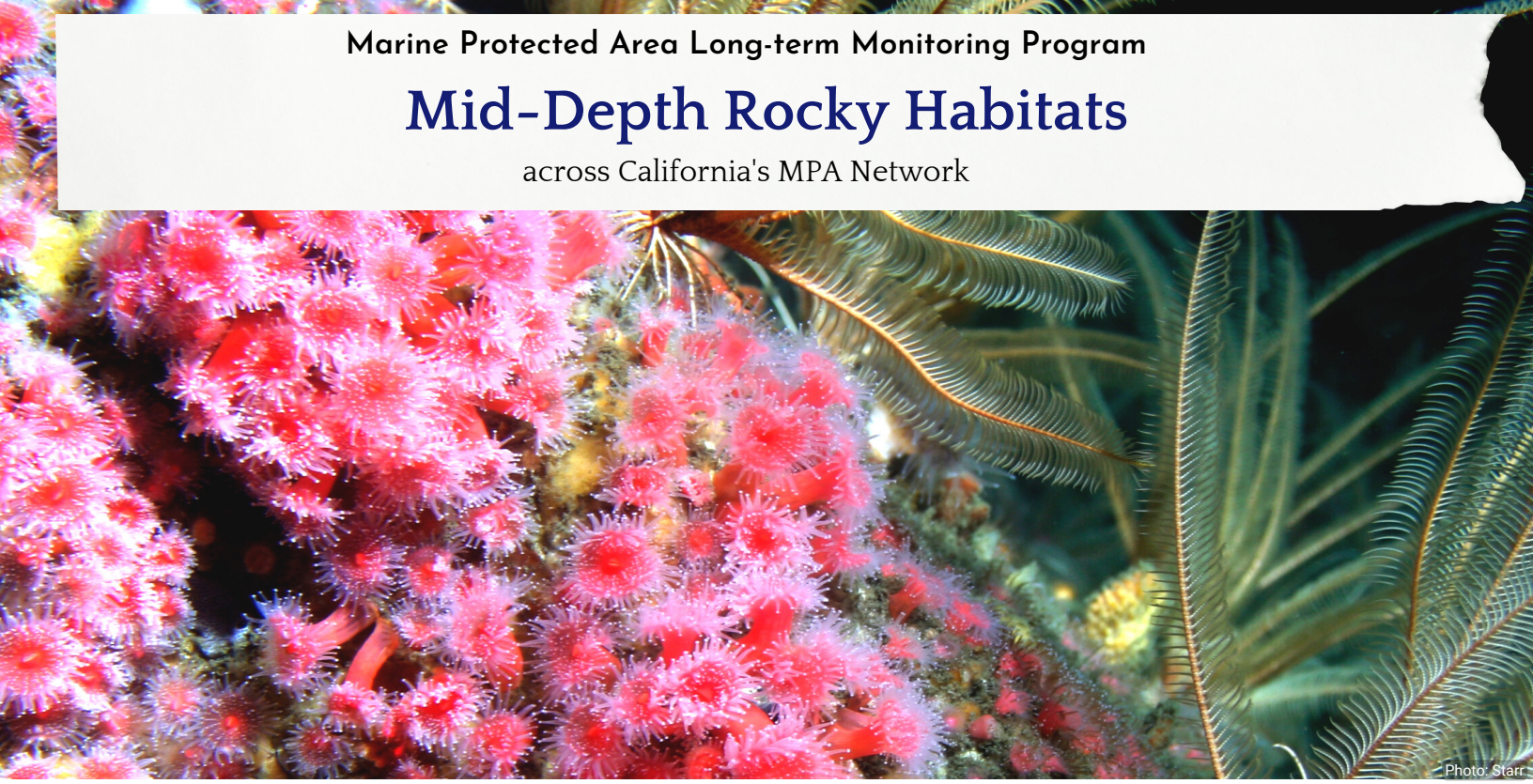


Photo: Starr

MPA Monitoring

California's Marine Protected Area (MPA) Network is approaching its first-ever 10-year review. California will lean heavily on its MPA monitoring program to show progress towards meeting the goals of the Marine Life Protection Act, the founding legislation of the MPA Network. Researchers and community scientists have been tracking California's marine ecosystems since MPA implementation, in some cases as far back as 2007. Learn more about this MPA monitoring program below and read the full technical report on California Sea Grant's website.

Program Overview

Rocky habitats deeper than 30 meters represent at least 75% of all marine habitats in California state waters by area. These habitats support a high diversity of ecologically and economically important fish and invertebrate species. The research team analyzed survey data to evaluate the effects of MPAs by comparing sites inside and outside of MPAs across the state. Biomass and size distribution of fishes and invertebrates were metrics used to assess the effect of MPA implementation on biological communities.

Partner Institutions

Moss Landing Marine Laboratories, UC Santa Barbara, Monterey Bay Aquarium Research Institute, Marine Applied Research and Exploration, CSU Monterey Bay, Cal Poly Humboldt

Access all of California's MPA data: California MPA Monitoring Portal.


Kahn

Mid-Depth is 30-100 meters

Program Highlights

96
MPAs mapped to determine high-quality rocky habitat areas

564
Human Occupied Vehicle (HOV) transects

1,331
tethered video lander drops

360
baited video lander surveys

2,445
Remotely Operated Vehicle (ROV) transects

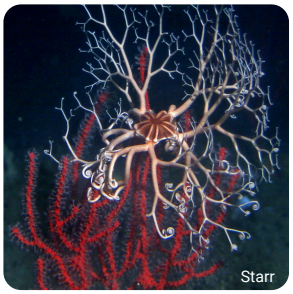
47
MPAs and their reference sites outside the MPA surveyed

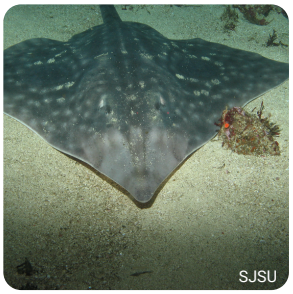
CALIFORNIA MARINE PROTECTED AREAS

Sea Grant California

Key Findings from MPA Monitoring

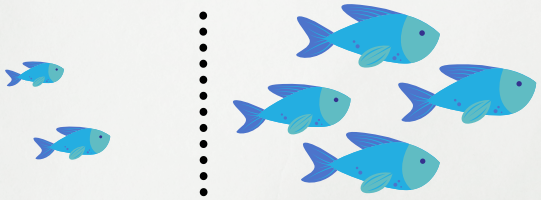
Mid-Depth Rocky Habitats





1 More Fish in MPAs

Fish densities have **increased** over time throughout the state, though MPA effects varied across species, location, management regions, and years. Some species showed clear **positive reserve effects**, including sheephead in the South Coast region. Additionally, sheephead were found to be **larger inside MPAs** where baited remote underwater video surveys were conducted (Anacapa and Carrington Pt.)



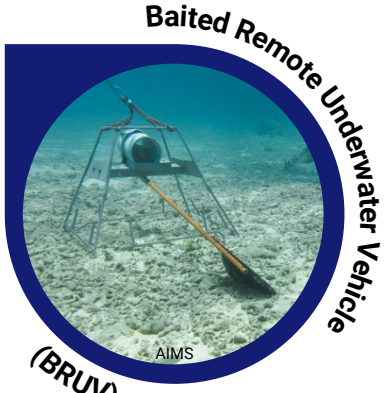
Outside of MPA | Inside of MPA

Sheephead density and size increased inside MPAs

2 More Invertebrates

Structure-forming invertebrates, such as corals and sponges, were found at **greater densities within MPAs** than in associated reference sites outside the MPA boundaries. In general, **echinoderms** such as sea stars, urchins, and sea cucumbers were responsible for the greatest variation between MPAs and reference areas and across regions. California sea cucumber showed **strong benefits to protections** in South Coast MPAs where fishing occurs, but not further north where there is no fishing pressure.

Mid-Depth Survey Methods



For more information about MPA long-term monitoring and the Decadal Management Review, please visit:

- Mid-Depth Rocky Habitats technical report
- California Sea Grant website to access all 7 MPA long-term technical reports
- CDFW's MPA Decadal Management Review webpage